

I CLAIM:

1. A method for fabricating a leadframe structure comprising a chip mount pad and a plurality of lead segments, each having a first end near said mount pad and a second end remote from said mount pad, comprising the steps of:

forming said structure from a sheet-like starting material;

plating a layer of nickel on said leadframe;

selectively masking said second segment ends,

thereby leaving said chip pad and said first segment ends exposed;

selectively plating a layer of palladium on said nickel layer on said exposed chip pad and segment ends in a thickness suitable for bonding wire attachment;

selectively masking said chip pad and said first segment ends, thereby leaving said second segment ends exposed; and

selectively plating a layer of tin onto said nickel layer on said exposed segment ends in a thickness suitable for parts attachment.

2. The method according to Claim 1 wherein said plating of said nickel layer and said plating of said selective palladium layer are performed in a first plating system providing for said palladium plating a wheel with apertures defining said selective locations.

3. The method according to Claim 1 wherein said plating of said tin layer is performed in a second plating system providing photo-imagible or printable plating masks.

4. The method according to Claim 3 wherein said second

plating system provides:

coating with a plating resist;
photoimaging;
developing said resist;
5 plating with tin;
stripping said resist;
rinsing; and
drying.

5. A method for fabricating a leadframe comprising the
10 steps of:

stamping from a sheet-like copper or copper alloy
starting material a leadframe having a mount pad
for an integrated circuit chip and a plurality of
lead segments having their first end near said
15 mount pad and their second end remote from said
mount pad;

in a first plating system, cleaning said leadframe
in alkaline soak cleaning and alkaline
electrocleaning;

20 activating said leadframe by immersing said
leadframe into an acid solution, thereby
dissolving any copper oxide;

immersing said leadframe into a first electrolytic
nickel plating solution and depositing a first
25 layer of nickel onto said copper, thereby fully
encasing said copper;

immersing said leadframe into a second electrolytic
nickel plating solution and depositing a second
layer of nickel onto said first nickel layer,
30 thereby adapting said second ends of said lead
segments for mechanical bending and solder
attachment;

selectively masking said second segment ends
thereby leaving, through apertures in said wheel,
said chip pad and said first segment ends
exposed;

5 immersing said leadframe into an electrolytic
palladium plating solution and depositing a
layer of palladium onto said exposed segment ends
in a thickness suitable for bonding wire
attachment;

10 in a second plating system, selectively masking said
chip pad and said first segment ends, thereby
leaving said second segment ends exposed, said
masking provided by photoresist coating,
photoimaging, and resist developing;

15 immersing said leadframe into a tin flood cell
plating solution and depositing a layer of tin
onto said exposed second segment ends in a
thickness suitable for parts attachment; and
stripping said photoresist, rinsing and drying.

20 6. The method according to Claim 5 wherein said first
plating system is a wheel-based system, and said second
plating system is a flood cell system.

7. The method according to Claim 5 wherein the process
steps are executed in sequence without time delays, yet
25 including intermediate rinsing steps.

8. The method according to Claim 5 wherein said acid
solution may be sulfuric acid, hydrochloric acid or any
other acid.

9. The method according to Claim 5 wherein said
30 photoimaging of said photoresist uses a wheel with
apertures defining the exposed area of said resist.